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# ISO TC 20 / SC 13 Status Report

**FOREWORD:** This report is related to the 51<sup>th</sup> ISO TC20 Committee on Aircraft and Space Vehicles Plenary Meeting, held in Arlington, VA, USA, in September 21-22, 2017.

# 1 Title and Scope

Title: Space data and information transfer systems

Scope: Space data systems

# 2 Chairman and secretary

Chairman:

Name (tenure): Eduardo Whitaker Bergamini

Organization/Country: National Institute for Space Research-INPE (Brazil)

Address: Avenida dos Astronautas, 1758, São José dos Campos, SP, Brazil

Phone: + 55 12 3208 6166/6603 (Fax: + 55 12 3208 6150)

E-mail: <u>e.w.bergamini@uol.com.br</u>

Secretary:

Name (tenure): James Afarin

Organization/Country: National Aeronautics and Space Administration-NASA

Address: NASA Headquarters, Washington, DC, U.S.A.

Phone: + 1-202-358-5221 E-mail: james.afarin@nasa.gov

Secretariat (Optional)

Name (tenure): Michael Blackwood (ANSI/U.S.A.)
Organization/Country: ASRC Federal Technical Services

Address: 7515 Mission Drive, Seabrook, MD 20706, U.S.A.

Phone: +1 301 837 3901

E-mail: michael.blackwood@asrcfederal.com

# 3 Meetings Held Since Last Report (SC and WG)

## **Meetings held**

No.	Date	Place
40	2011-11-16	Moscow, Russia
41	2012-04-24	Darmstadt, Germany
42	2012-12-11	Kennedy Space Center, FL, U.S.A.
43	2013-04-23	Bordeaux-Latresne, France
44	2013-12-10	St. Hubert, Montreal, Quebec, Canada
45	2014-04-08	Noordwijk, Netherlands
46	2015-05-20	Nagano, Japan (Formal Meeting)
47	2015-11-17	Darmstadt, Germany (Informal M.)
48	2016-04-27	São José dos Campos, Brazil (Formal M.)
49	2016-10-24	Rome, Italy (Informal M.)
50	2017-06-14	St. Petersburg, Russia (Formal M.)

# Schedule of future meetings

51 2017-11-14 Darmstadt, Germany (Formal Meeting)

# Agenda of the 50<sup>th</sup> Meeting in St. Petersburg, Russia, in June 14, 2017

- **1.** (10:00) Opening of the meeting.
- **2.** (10:00-10:05) Roll call of delegates
- **3.** (10:05-10:10) Appointment of the drafting committee.
- **4.** (10:10-10:15) Approval of the 50<sup>th</sup> meeting Agenda (**N1601**).

- **5.** (10:15-10:20) Approval of the previous, 49<sup>th</sup> Meeting Package (See [\*], Minutes Ref. **N1598**).
- **6.** (10:20-10:45) Presentation of Member Report by Delegates.
- 7. (10:45-10:55) Update on CCSDS-ISO TC20/SC13 and ISO TC20/SC14 Liaison activities.
- 8. (10:55-11:05) Potential Liaisons with ISO TC20 SC16 (Unmanned A/C Sys.) and SC17(Airp. Infrastr.).
- 9. (11:05-11:25) Candidacy for new Chairmanship of the Subcommittee in 2018.
- **10.** (11:25-11:35) Review and update of the Resolutions and Action Items.
- 11.(11:35-11:40) Other Business and Planning for the (Formal) 51st meeting.
- **12.**(11:40) Adjourn

OBS. A P-Member REPORT is: 1) Expected, in a FORMAL meeting; 2) Optional, in an INFORMAL meeting.

### **Meeting Packages**

A compilation of all the information (minutes, resolutions, action items, reports, etc.) that resulted from each of the Subcommittee meetings, named MEETING PACKAGES, can be found with the use of the following URL pointers that lead to each of the Subcommittee Website meeting folders:

### a) ISO Livelink Website:

http://isotc.iso.org/livelink/livelink?func=ll&objld=11659509&objAction=browse&viewType=1

### b) CWE/CCSDS Website:

https://cwe.ccsds.org/cmc/docs/Forms/AllItems.aspx?RootFolder=%2Fcmc%2Fdocs%2FISO%20TC20-SC13%20Subcommittee%2F06%2EISO%20TC20-

<u>SC13%20Subcommittee%20Meeting%20Packages&FolderCTID=0x012000C9B29CAF838A2A4AB601E4757729A740</u> &View=%7BA9212960-ACE0-4540-AAC0-8CE5EA05B273%7D

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# 4 Participation and liaisons

## 4.1 P-member bodies (12)

No.	Country	Member Body
1	BRAZIL ( <b>Chairman</b> )	ABNT
2	FRANCE	AFNOR
3	UNITED STATES (Secretariat)	ANSI
4	INDIA	BIS
5	UNITED KINGDOM	BSI
6	GERMANY	DIN
7	UKRAINE	DSTU
8	RUSSIAN FEDERATION	GOST R
9	JAPAN	JISC
10	KAZAKHSTAN [*]	KAZMEMST
11	CHINA -	SAC
12	ITALY	UNI

<sup>[\*]</sup> Pending the Nomination of Representative of KAZMEMST to ISO TC20/SC13 (Oct. 2017).

# Criteria used for the realization of the subcommittee meetings

ISO TC20/SC13 Subcommittee Plenary meetings have been observing a methodical alternation between FORMAL and INFORMAL meetings. In INFORMAL meetings, P-Member are not expected to present a Report. It is expected the realization of at least one Subcommittee meeting per year and, in this case, it will, necessarily, be a FORMAL meeting, accompanied by the presentation of Reports, by the P-Members.

## 4.2 O-member bodies (8)

No.	Country	Member Body
1	Romania	ASRO
2	Argentina	IRAM
3	Iran, Islamic Republic of	ISIRI
4	Korea, Republic of	KATS
5	Poland	PKN
6	Finland	SFS
7	Sweden	SIS
8	Czech Republic [*]	UNMZ

[\*] Pending the Nomination of UNMZ Representative to ISO TC20/SC13 (Oct. 2017).

**Total:** 12(P) + 8(O) = 20 Member bodies

# 4.3 Liaisons (Contacts)

After a detailed review in conjugation with CCSDS in the past year, the current frame of ISO TC20/SC13 Subcommittee Liaisons with ISO and Non-ISO Organizations is presented by the following, combined Table:

#### ISO TC20/SC13 Subcommittee Members, Liaisons, and Associates

Updated: 25 September 2017

Subcommittee on Space data and information transfer systems

This list, maintained by ISO TC20/SC13, also includes contents provided by ISO-CS List, as of: 25 September

2017
<u>LEGEND:</u> n/a-not applicable; t.b.d.-to be defined; t.b.c.-to be confirmed

#### Liaisons with ISO organizations

Organization	Name	E-Mail
External Liaison - ISO CS Technical Program Manager External Liaison - ISO TC20 External Liaison - ISO TC20 Internal Liaison - ISO/TC20/SC13 Internal Liaison - ISO/TC20/SC13	Dryden, Andrew ("Andy") Carnahan, Christopher ("Chris") - Secretary Rentsch, James ("Rusty") - Chairman Afarin, James (Secretary) Bergamini, Eduardo (Chairperson)	dryden@iso.org chris.carnahan@aia-aerospace.org (usty.rentsch@aia-aerospace.org (james.afarin@nasa.gov e.w.bergamini@uol.com.br
External Liaison - ISO/TC46/SC 4 External Liaison - ISO/TC46/SC 4 Internal Liaison - CCDS MOIMS DAI - ISO/TC20/SC13 Internal Liaison - CCSDS MOIMS DAI - ISO/TC20/SC13	Hakala, Juha (Chairperson) Heiskanen, Kati (Secretary) Giaretta, David Garrett, J.	iuha.hakala@helsinki.fi kati.heiskanen@sfs.fi david@giaretta.org garrett@his.com
Chairperson - ISO/TC 211 Secretary - ISO/TC 211 Chairperson - ISO/TC 211 (Associate) Internal Liaison - CCSDS MOIMS DAI WG - ISO TC20/SC13	Ostensen, Olaf Allansson, Christine Ostensen, Olaf (Chairperson) Giaretta, David (Chairperson, MOIMS DAI WG)	olaf.ostensen@kartverket.no christine.allansson@sis.se olaf.ostensen@kartverket.no david@giaretta.org
Chairperson - ISO/TC46/SC11 (Associate) Secretary - ISO/TC46/SC11 (Associate) Internal Liaison - CCSDS MOIMS DAI WG - ISO TC20/SC13	Ellis, Judith (Chairperson) Hobern, Clare (Secretary) Giaretta, David (Chairperson MOIMS DAI WG)	judithellis@enterpriseknowledge.com.au Clare.Hobern@standards.org.au david@giaretta.org
External Liaison - CCSDS-ISO/TC20/SC14 Technical Liaison Internal Liaison - CCSDS - ISO/TC20/SC13 Technical Liaison Chairperson - ISO/TC20/SC14 Chairperson - ISO/TC20/SC13 Secretary - ISO/TC20/SC14 Secretary - ISO/TC20/SC14 Secretary - ISO/TC20/SC13	Slane, Frederick Shames, Peter (CCSDS CESG SEA AD) Güll, Paul (Chairperson) Bergamini, Eduardo (Chairperson) Tongson, Nick (Secretary) Afarin, James (CCSDS & ISO TC20/SC13 Secretary)	freds@spacestandards.org Peter.M.Shames@pl.nasa.gov paul.gill@nasa.gov e.w.bergamini@uol.com.br NickT@alaa.org james.afarin@nasa.gov
External Liaison - ISO/TC20/SC14/WG3 Internal Liaison - ISO/TC20/SC13	Oltrogge, Dan (ISO TC20/SC14 WG3 & WG4) Berry, David S. (CCSDS MOIMS NAV WG Chair)	doltrogge@agi.com david.s.berry@jpl.nasa.gov
External Liaison - ISO IEC JTC 1 / SC29 Internal Liaison - ISO/TC20/SC13	<mark>t.b.d</mark> Grubbs, Rodney	L.b.d Rodney.grubbs@nasa.gov
External Liaison - ISO CS Technical Program Manager External Liaison - ISO TC20 External Liaison - ISO TC20 Internal Liaison - ISO/TC20/SC13 Internal Liaison - ISO/TC20/SC13	Dryden, Andrew ("Andy") Carnahan, Christopher ("Chris") - Secretary Rentsch, James ("Rusty") - Chairman Afarin, James (Secretary) Bergamini, Eduardo (Chairperson)	dryden@iso.org phris.carnahan@aia-aerospace.org rusty.rentsch@aia-aerospace.org łames.afarin@nasa.gov ew.bergamini@uol.com.br
Liaisons with Non-ISO organizations		
Organization	Name	E-Mail
External Liaison - CCSDS Internal Liaison - ISO/TC20/SC13	Afarin, James (Secr. & CMC Chairman) Bergamini, Eduardo (Chairman)	james.afarin@nasa.gov e.w.bergamini@uol.com.br
External Liaison - FSA	Miró, Juan	iuan.miro@esa.int

ISO TC20/SC13 Annual Report to ISO TC20 associated to the 51th Plenary Meeting, Arlington, VA, U.S.A., September 21-22, 2017

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Internal Liaison - ISO/TC20/SC13	Miró, Juan	juan.miro@esa.int
External Liaison - ECSS Internal Liaison - ISO/TC20/SC13		gilles.moury@cnes.fr gilles.moury@cnes.fr
External (Informal) Liaison – CEN/CLC/TC5 Internal (Informal) Liaison - ISO/TC20/SC13		osvaldo.peinado@dlr.de osvaldo.peinado@dlr.de

#### NAMES OF THE EXTERNAL LIAISON ORGANIZATIONS:

- CCSDS Consultative Committee for Space Data Systems
- ESA European Space Agency
- ECSS European Cooperation for Space Standardization
- ISOCS-TPM ISO Central Secretariat-Technical Program Manager
- ISO TC20/SC14 Subcommittee on space systems and operations
- ISO TC20/SC14 WG3 Working Group on operations and ground support
- ISO JTC1/SC2 Subcommittee on coded character sets
- ISO JTC1/SC29 Subcommittee on coding audio, picture, multimedia and hypermedia information
- ISO JTC1/SC29/WG1- Working Group on coding of still pictures
- ISO JTC1/SC32 Subcommittee on data management and interchange
- ISO TC 211 Technical Committee on geographic information/geomatics
- ISO TC46/SC11 Subcommittee on archives/records management
- ISO TC46/SC4 Subcommittee on technical interoperability

### 4.4 Pending since the previous 2016 ISO/TC 20 Plenary Meeting

The nomination of a Representative to ISO TC20/SC13 Subcommittee continues to be expected from: 1) KAZMEMST/Kazakhstan, as a P-Member; and from; 2) UNMZ/Czech Republic as an O-Member.

## 4.5 Absence of P-member bodies in the Subcommittee Meetings

Most of the P-members continue to not attend the subcommittee meetings, as it has been observed, for years. No justification has been presented for their absence in the Subcommittee meetings.

## 5 Matters for Acquaintance of ISO/TC20

#### 5.1 Candidacy for new Chairmanship of the Subcommittee in 2018

The Chairman of ISO TC20/SC13 Subcommittee, Eduardo Bergamini pointed out in the 50th meeting held in St. Petersburg in June 2017 that ISO TC20/SC13 Subcommittee is expected to have a new Chairman that will succeed him, beginning in 2018. Therefore, it was noted that the decision for a new Chairman of the Subcommittee must be made during the next, 51st ISO TC20/SC13 formal meeting, expected to take place in November (2017). During this meeting the subcommittee will identify and elect the new Chairman of the Subcommittee, while observing the 2017 deadline of the current term of the Chairman. At the occasion (June 2017), the Secretary expressed his understanding that this is a point for discussion during the mid-term CCSDS-CMC teleconference, in a way that it may lead to a conclusion on whom the new chairperson should be. In any case, this topic will be discussed in the coming Subcommittee meeting to be held in Darmstadt, in November 2017.

## 5.2 Review of the discrepancies between ISO and CCSDS standards

Led by Dr. E. Bergamini, the group briefly discussed the need to reconcile discrepancies between CCSDS standards and ISO standards. N. Peccia, Director of CCSDS Engineering Steering Group (CESG) noted that there are discrepancies between ISO and CCSDS documents based on their point, or status, in their review lifecycle. The group then discussed the best option for removing silvered CCSDS books from the ISO publications. O. Peinado pointed out that some silver books still are used as standards, so they should not be deleted as an ISO book, and thus DIN would prefer to let them be resolved through the regular ISO lifecycle. It was also noted that eventual differences in status between the two organizations, CCSDS and ISO TC20/SC13, is also due to the non-synchronicity of the timing in the processing of new items and of reviews in the domain of each of them. The decision has been made to leave the documents and standards follow their normal process in ISO domain. Therefore, in some cases, asynchronicity of processing of documents and standards between CCSDS and ISO TC20/SC13 is expected to continue. A request was made to also add this note to the current CCSDS CMC Meeting minutes, as well.

#### 5.3 Potential Liaisons with ISO TC20/SC16 and SC17

The Chairman of the Subcommittee, Eduardo Bergamini, reminded the attendees of the last (June 2017), 50<sup>th</sup> meeting of the Subcommittee that there may be an eventual opportunity for CCSDS-ISO TC20/SC13 to liaise with ISO TC20/SC 16 and SC 17. However, E. Bergamini also noted that it was recently found that the Programs of Work of each of the two mentioned, new Subcommittees of ISO/TC20 seem to be not sufficiently stable, yet. That is, an analysis and review of their programs of work is recommended to be postponed for future consideration, as found to be applicable. E. Bergamini justified this initiative, for example, reminding that spaceports might be in the context of ISO TC20/SC17 (Airport Infrastructure) and, should this be the case, space data systems, the central theme of CCSDS-ISO TC20/SC13, may eventually be related (communication and data transport protocols, etc.) to that context. Similar consideration might eventually justify liaise of the Subcommittee with ISO TC20/SC16 (Unmanned Aircraft Systems) Subcommittee, as well.

## 6 Any other matters of importance to ISO/TC 20

#### 6.1 Maintenance of the information structure of the subcommittee

It is reminded that important, different topics folders and respective, sub-folders and files continue to be regularly maintained and updated as part of an organized structure of information, containing key items, like: meeting packages, Programs of Work, List of Members, Liaisons and Associates, Correspondences, etc.) which are regularly derived from the many Subcommittee activities.

The two following URL pointers, associated to two different Websites, provide entries for reaching the structured contents which are regularly maintained and updated by the Subcommittee:

#### 6.1.1 In the ISO TC20/SC13 ISO-LiveLink Website:

http://isotc.iso.org/livelink/livelink?func=ll&objId=8791604&objAction=browse&sort=name&viewType=1

#### 6.1.2 In the ISO TC20/SC13 CCSDS-CWE Website:

https://cwe.ccsds.org/cmc/docs/Forms/AllItems.aspx?RootFolder=/cmc/docs/ISO%20TC20-SC13%20Subcommittee&

# 7 Programme of Work

As justified and explained in the previous annual report of ISO TC20/SC13 report to ISO/TC20, it is reminded that the so called INTEGRATED PROGRAM OF WORK results from the combined compilation of two different sources of information, each of them, originated from the two following, separately maintained, PoWs (Programs-of-Work), where: 1) One of the PoWs is maintained by the secretariat of the Subcommittee, and is named "SECRETARIAT POW", and; 2) The other PoW is maintained by ISO Central Secretariat, and is named "ISO CS POW".

#### 7.1 INTEGRATED POWs made available in the Subcommittee Websites

The two Websites of the Subcommittee contain, each of them, a folder that, in turn, contains the monthly issue of ALL the available, combined Program of Work (PoW) of the Subcommittee. Each item of this folder is being named INTEGRATED POW of the Subcommittee. Each of the two folders can be accessed by the following URL pointers:

### 7.1.1 Program of Work Folder Available in ISO TC20/SC13 ISO-LiveLink Website:

http://isotc.iso.org/livelink/livelink?func=ll&objld=10035623&objAction=browse&viewType=1

### 7.1.2 Program of Work Folder Available in ISO TC20/SC13 CCSDS-CWE Website:

https://cwe.ccsds.org/cmc/docs/Forms/AllItems.aspx?RootFolder=%2Fcmc%2Fdocs%2FISO%20TC20-

SC13%20Subcommittee%2F05%2EISO%20TC20-

SC13%20Subcommittee%20Program%20of%20Work&FolderCTID=0x012000C9B29CAF838A2A4AB601E4757729A740 
&View=%7BA9212960-ACE0-4540-AAC0-8CE5EA05B273%7D

#### 7.2 The INTEGRATED PROGRAM OF WORK (POW) of AUGUST 2017

The ISO TC20/SC13 Subcommittee INTEGRATED PROGRAM OF WORK (PoW) monthly issue of AUGUST 2017 is reproduced below, with the same content that can be found in both Websites of the Subcommittee as provided by the two URL pointings that are presented in the preceding section **7.1**.

MONTHLY ISSUE: AUGUST 2017 (Version of 26 September 2017, directly derived from SECRETARIAT PoW of 14 September 2017 and from ISO CS PoW of 14 September 2017)

#### ISO TC20/SC13 Subcommittee - Space data and information transfer systems

- **NOTICE 1:** The ISO TC20/SC13 Subcommittee INTEGRATED PROGRAM OF WORK or, simply, the Subcommittee INTEGRATED PoW, is updated on a monthly basis and is presented as the result of the concatenation of the following two Programs of Work: 1) The ISO TC20/SC13 Subcommittee Secretariat Program of Work, named SECRETARIAT PoW, and; 2) The ISO Central Secretariat Program of Work, named ISO CS PoW.
- NOTICE 2: Given that ALL the inputs to the Subcommittee INTEGRATED PoW are provided by the SECRETARIAT PoW or by the ISO CS PoW, each content written in the each of the slots of the HEADER of the list of items will be ADDED by one of the following three (3) notations: 1) Header added by the notation (S) that indicates that ALL the column instantiating slots associated to the header are originated from the SECRETARIAT PoW; 2) Header added by the notation (I), that indicates that ALL the column instantiating slots associated to the header are originated from the ISO CS PoW; 3) Header added by the notation (S,I), that indicates that ALL the column instantiating slots associated to the header originated from the SECRETARIAT PoW or from the ISO CS PoW, therefore, observing the specific colour associated to the PoW (SECRETARIAT or ISO CS) which originated the instance presented in the slot.
- **NOTICE 3:** The current and preceding monthly issues of the Subcommittee **INTEGRATED PoW** can be found in the associated folder of the two Subcommittee Websites, by clicking the following pointers:
- 2.1 Folder of the INTEGRATED PoWs in ISO Livelink Website of ISO TC20/SC13 Subcommittee.
- 2.2 Folder of the INTEGRATED Pows in CCSDS-CWE Website of ISO TC20/SC13 Subcommittee.

**NOTICE 4:** This publication is being maintained on a monthly basis with support of the local secretariat of the Subcommittee Chairman.

#### **COLOR CODES:**

EXPLANATION (Attention, please!): With the use of specific and exclusive colours that are clearly defined in the following lines, the identity of EACH existing line of an item listed in this issue of Program of Work EXCLUSIVELY reflects a SINGLE ORIGIN, be it, from the SECRETARIAT PoW or, from the ISO CS PoW. That is, although some of the slot contents of each of the listed items may be of common meaning for both, SECRETARIAT PoW and ISO CS PoW, each slot content is strictly associated to just ONE of these two Programs of Work as justified by the colour of the item that is under consideration over the whole line. Just that.

**WHITE Color** – Used as white background color in listed items that have already been introduced by the Subcommittee Secretariat in a previous issue of the SECRETARIAT PoW and that are also considered to be under regular processing by ISO CS.

**RED Color** - When used in a slot of the "NI (New Item)" column, the red color in background indicates that the listed item is a NEW one; If the slot is marked-up in red background with the letter S, means that the New Item NI comes from Subcommittee SECRETARIAT PoW; Otherwise, if the slot is marked-up in red background with the letter I, means that the New Item NI comes from ISO CS PoW:

YELLOW Color - When the yellow background color is used it indicates that the listed item was provided by the Subcommittee SECRETARIAT PoW. In this case, the associated "Next Action/Date" (S) column slot presents red color in background and contains a written reminder to the Subcommittee Secretariat of the limit date for submisson of the corresponding document to ISO CS.

**GREEN Color** - When the green background color is used it indicates that the listed item was provided by the Subcommittee SECRETARIAT PoW. In this case, the associated "Next Action/Date" (S) column slot presents red color in background and contains a written reminder to the Subcommittee Secretariat of the date when the status of the submisson of the corresponding document has to be checked-out with ISO CS.

**GREY Color** - The grey background color is used in listed items that are also presented in the SC13 PoW that is maintained by ISO in its ISO CS PoW, in ISO Livelink Portal.

### **LEGEND:**

ALERT Mark-ups for Projects: 1) D for Cancelled or Deleted item; 2) W for Warning, derived from ISO TMB Resolution for 3 tracks rule; 3) Stage Date: Initial date of current stage; 4) Limit Date: Limit date for next stage; 5) VA: Legal Organization for project under Vienna Agreement; 6) Time Frame: Related to ISO stage; 7) PA: Header for Patent Associated mark-ups with P; 8) ISO SR Date: Date of Entry for ISO Systematic Review; These entries are to be provided by the Subcommittee Secretariat.

## a. Published standards: 60 (Publication Stage)

Color codes	ISO Reference (withdrawal date)	ISO Document title	Current stage	CCSDS Reference (obsolescence date)	ISO SR Date
	ISO 10537:2016	Encapsulation Service		133.1-B-2 (Oct 2009)	2021-11-15
	ISO 10537:2016	Space data and information transfer systems Encapsulation service	60.60		
	ISO 12175:1994/Amd 1:2015	Space data and information transfer systems Standard formatted data units Structure and construction rules Amendment 1	60.60		
	ISO 13526:2010/Amd 1:2015	Space data and information transfer systems Tracking data message Amendment 1	60.60		
	ISO 15887:2013	Lossless Data Compression		121.0-B-2 (May 2012)	2018-06-01
	ISO 15887:2013	Space data and information transfer systems Lossless data compression	60.60		

ISO 16919:2014	Requirements for Bodies Providing Audit and Certification of Candidate Trustworthy Digital Repositories		652.1-M-2 (Mar 2014)	2019-10-29
ISO 16919:2014	Space data and information transfer systems - Requirements for bodies providing audit and certification of candidate trustworthy digital repositories	60.60		
ISO 17807:2013	Asynchronous Message Service		735.1-B-1 (Sep 2011)	2016-06-01
ISO 17807:2013	Space data and information transfer systems Asynchronous message service	60.60		
ISO17808:2014	TM Channel Coding Profiles		131.4-M-1 (Jul 2011)	2019-07-01
ISO17808:2014	Space data and information transfer systems Telemetry (TM) channel coding profiles	60.60		
ISO 17809:2014	Delta-Differential One Way Ranging (Delta-DOR) Operations		506.0-M-1 (Apr 2011)	2019-07-01
ISO 17809:2014	Space data and information transfer systems - Delta- Differential One Way Ranging (Delta-DOR) Operations	60.60		
ISO 17810:2014	Data Transmission and PN Ranging for 2 GHz CDMA Link via Data Relay Satellite		415.1-B-1 (Sep 2011)	2019-07-01
ISO 17810:2014	Space data and information transfer systems - Data Transmission and pseudo- random noise (PN) Ranging for 2 GHz code division multiple access (CDMA) CDMA Link via Data Relay Satellite	60.60		
ISO 17854:2013	Flexible Advanced Coding and Modulation Scheme for High Rate Telemetry		131.2-B-1 (Mar 2012)	2016-06-01
ISO 17854:2013	Space data and information transfer systems - Flexible Advance Coding and Modulation Scheme for High Rate Telemetry Applications	60.60		
ISO 18201:2013	Mission Operations Reference Model		520.1-M-1 (Jul 2010)	2016-06-01
ISO 18201:2013	Space data and information transfer systems Missions operations reference model	60.60		

ISO 18202:2015	Mission Operations Message Abstraction Layer		521.0-B-2 (Mar 2013)	2020-12-15
ISO 18202:2015	Space data and information transfer systems Mission operations message abstraction layer	60.60		
ISO 18381:2013	Lossless Multispectral & Hyperspectral Image Compression		123.0-B-1 (May 2012)	2016-06-01
ISO 18381:2013	Space data and information transfer systems Lossless multispectral & hyperspectral image compression	60.60		
ISO 18382:2013	Spacecraft Onboard Interface Services - RFID-Based Inventory Management Systems		881.0-M-1 (May 2012)	2016-06-01
ISO 18382:2013	Space data and information transfer systems Spacecraft onboard interface services RFID-based inventory management systems	60.60		
ISO 18423:2015	Pseudo-Noise (PN) Ranging Systems		414.1-B-2 (Feb 2014)	2020-08-15
ISO 18423:2015	Space data and information transfer systems Pseudo-Noise (PN) Ranging Systems	60.60		
ISO 18424:2013	XML Telemetric and Command Exchange (XTCE)		660.0-B-1 (Oct 2007)	2016-06-01
ISO 18424:2013	Space data and information transfer systems XML Telemetric and Command Exchange (XTCE)	60.60		
ISO 18425:2013	Spacecraft Onboard Interface Services - Subnetwork Packet Service		851.0-M-1 (Dec 2009)	2016-06-01
ISO 18425:2013	Space data and information transfer systems Spacecraft Onboard Interface Services Subnetwork Packet Service	60.60		
ISO 18426:2013	Spacecraft Onboard Interface Services - Subnetwork Memory Access Service		852.0-M-1 (Dec 2009)	2016-06-01
ISO 18426:2013	Space data and information transfer systems Spacecraft Onboard Interface Services Subnetwork Memory Access Service	60.60		
ISO 18427:2013	Spacecraft Onboard Interface Services - Subnetwork Synchronization Service		853.0-M-1 (Dec 2009)	2016-06-01

ISO 18427:2013	Space data and information transfer systems Spacecraft Onboard Interface Services Subnetwork Synchronization Service	60.60		
ISO 18428:2013	Spacecraft Onboard Interface Services - Subnetwork Device Discovery Service		854.0-M-1 (Dec 2009)	2016-06-01
ISO 18428:2013	Space data and information transfer systems Spacecraft Onboard Interface Services Subnetwork Device Discovery Service	60.60		
ISO 18438:2013	Spacecraft Onboard Interface Services - Subnetwork Test Service		855.0-M-1 (Dec 2009)	2016-06-01
ISO 18438:2013	Space data and information transfer systems Spacecraft Onboard Interface Services Subnetwork Test Service	60.60		
ISO 18440:2016	Space Link Extension - Internet Protocol for Transfer Services		913.1-B-2 (Sep 2015)	2021-11-15
ISO 18440:2016	Space data and information transfer systems Space link extension Internet protocol for transfer services	60.60		
ISO 18442:2016	Space Link Extension - Application Program Interface for Return Channel Frames All Service		915.1-M-2 (Sep 2015)	2021-11-15
ISO 18442:2016	Space data and information transfer systems Space link extension Application Program Interface for Return all frames service	60.60		
ISO 18443:2016	Space Link Extension - Application Program Interface for Return Channel Frames Service		915.2-M-2 (Sep 2015)	2021-11-15
ISO 18443:2016	Space data and information transfer systems Space link extension Application program interface for return channel frames service	60.60		
ISO 18444:2016	Space Link Extension - Application Program Interface for Return Operational Control Fields Service		915.5-M-2 (Sep 2015)	2021-11-15
ISO 18444:2016	Space data and information transfer systems Space link extension Application program interface for return operational control fields service	60.60		
ISO 18445:2016	Space Link Extension - Application Program Interface for the Forward CLTU Service		916.1-M-2 (Sep 2015)	2021-11-15
ISO 18445:2016	Space data and information transfer systems Space link extension Application program interface for the forward CLTU service	60.60		

ISO 18446:2016	Space Link Extension - Application Program Interface for the Forward Space		916.3-M-2 (Sep 2015)	2021-11-15
ISO 18446:2016	Space data and information transfer systems Space link extension Application program interface for the forward space packet service	60.60		
ISO 19389:2014	Conjunction Data Message		508.0-B-1 (Jun 2013)	2019-07-01
ISO 19389:2014	Space data and information transfer systems Conjunction data message	60.60		
ISO 20104:2015	Producer-Archive Interface Specification (PAIS)		651.1-B-1 (Feb 2014)	2020-08-15
ISO 20104:2015	Space data and information transfer systems Producer-Archive Interface Specification (PAIS)	60.60		
ISO 20105:2015	Operation of CFDP Over Encapsulation Service		722.1-M-1 (Mar 2014)	2020-08-15
ISO 20105:2015	Space data and information transfer systems Operation of CFDP over encapsulation service	60.60		
ISO 20106:2015	Mission Operations Common Object Model		521.1-B-1 (Feb 2014)	2020-08-15
ISO 20106:2015	Space data and information transfer systems Mission operations common object model	60.60		
ISO 20205:2015	Spacecraft Onboard Interface Systems - Low Data- Rate Wireless Communications for Spacecraft Monitoring and Control		882.0.M-1 (May 2013)	2020-08-15
ISO 20205:2015	Space data and information transfer systems Spacecraft Onboard Interface Systens - Low Data Rate Wireless Communications for Spacecraft Monitoring and Control	60.60		
ISO 20206:2015	IP Over CCSDS Space Links		702.1-B-1 (Sep 2012)	2020-08-15
ISO 20206:2015	Space data and information transfer systems IP over CCSDS space links	60.60		
ISO 20207:2015	CCSDS Space Link Protocols over ETSI DVB-S2 Standard		131.3-B-1 (Mar 2013)	2020-08-15

ISO 20207:2015	Space data and information transfer systemsCCSDS Space Link Protocols over ETSI DVB-S2 Standard	60.60		
ISO 20208:2015	Space data and information transfer systems Delta- DOR Raw Data Exchange Format		506.1-B-1 (Jun 2013)	2020-08-15
ISO 20208:2015	Delta - DOR Raw Data Exchange Format	60.60		
ISO 20210:2015	Mission Operations Message Abstraction Layer - JAVA API		523.1-M-1 (Apr 2013)	2020-08-15
ISO 20210:2015	Space data and information transfer systemsMission Operations Message Abstraction Layer - JAVA API	60.60		
ISO 20214:2015	Security Architecture for Space Data Systems		351.0-M-1 (Nov 2012)	2020-08-15
ISO 20214:2015	Space data and information transfer systems Security Architecture for Space Data Systems	60.60		
ISO 20215:2015	CCSDS Cryptographic Algorithms		352.0-B-1 (Nov 2012)	2020-08-15
ISO 20215:2015	Space data and information transfer systems CCSDS Cryptographic Algorihtms	60.60		
DIS 21076	Space Communications Cross Support - Architecture Requirements Document		901.1-M-1 (May 2015)	Under Development
ISO 21076:2016	Space Communications Cross Support - Architecture Requirements Document		901.1-M-1 (May 2015)	2021-12-23
ISO 21076:2016	Space data and information transfer systems Space communications cross support Architecture requirements document (based on CCSDS 901.1-M-1)	60.60		
DIS 21080	Licklider Transmission Protocol (LTP) for CCSDS		734.1-B-1 (May 2015)	Under Development
ISO 21080:2016	Licklider Transmission Protocol (LTP) for CCSDS		734.1-B-1 (May 2015)	2021-12-23
ISO 21080:2016	Space data and information transfer systems Licklider transmission protocol (LTP) for CCSDS (based on CCSDS 734.1-B-1)	60.60		
DIS 21082	Mission Operations - MAL Space Packet Transport Binding and Binary Encoding		524.1-B-1 (Aug 2015)	Under Develoment

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Mission Operations - MAL Space Packet Transport Binding and Binary Encoding		524.1-B-1 (Aug 2015)	2021-09-23
Mission operations MAL space packet transport binding and binary encoding	60.60		
CCSDS Bundle Protocol Specification		734.2-B-1 (Sep 2015)	2021-11-15
Space data and information transfer systems CCSDS Bundle protocol specification	60.60		
Space Data Link Security Protocol		355.0-B-1 (Sep 2015)	2021-11-15
Space data and information transfer systems Space data link security	60.60		
Proximity-1 Space Link Protocol - Coding and Synchronization Sublayer		211.2-B-2 (Dec 2013)	2020-08-15
Space data and information transfer systems Proximity-1 space link protocol Coding and synchronization sublayer	60.60		
Proximity-1 Space Link Protocol - Physical Layer		211.1-B-4 (Dec 2013)	2020-08-15
Space data and information transfer systems Proximity-1 space link protocol Physical layer	60.60		
TC Synchronization and Channel Coding		231.0-B-2 (Sep 2010)	2020-11-15
Space data and information transfer systems TC synchronization and channel coding	60.60		
TM Space Data Link Protocol		132.0-B-2 (Sep 2015)	2021-11-15
Space data and information transfer systems TM (telemetry) space data link protocol	60.60		
Space data and information transfer systems Space packet protocol Amendment 1	60.60		
Proximity-1 Space Link Protocol - Data Link Layer		211.0-B-5 (Dec 2013)	2020-08-15
	Binding and Binary Encoding  Mission operations MAL space packet transport binding and binary encoding  CCSDS Bundle Protocol Specification  Space data and information transfer systems CCSDS Bundle protocol specification  Space Data Link Security Protocol  Space data and information transfer systems Space data link security  Proximity-1 Space Link Protocol - Coding and Synchronization Sublayer  Space data and information transfer systems Proximity-1 space link protocol Coding and synchronization sublayer  Proximity-1 Space Link Protocol - Physical Layer  Space data and information transfer systems Proximity-1 space link protocol Physical layer  TC Synchronization and Channel Coding  Space data and information transfer systems TC synchronization and channel coding  TM Space Data Link Protocol  Space data and information transfer systems TM (telemetry) space data link protocol  Space data and information transfer systems Space packet protocol Amendment 1	Binding and Binary Encoding  Mission operations MAL space packet transport binding and binary encoding  CCSDS Bundle Protocol Specification  Space data and information transfer systems CCSDS Bundle protocol specification  Space Data Link Security Protocol  Space data and information transfer systems Space data link security  Proximity-1 Space Link Protocol - Coding and Synchronization Sublayer  Space data and information transfer systems Proximity-1 space link protocol Coding and synchronization sublayer  Proximity-1 Space Link Protocol - Physical Layer  Space data and information transfer systems Proximity-1 space link protocol Physical Layer  Space data and information transfer systems Proximity-1 space link protocol Physical layer  TC Synchronization and Channel Coding  Space data and information transfer systems TC synchronization and channel coding  TM Space Data Link Protocol  Space data and information transfer systems TM (telemetry) space data link protocol  Space data and information transfer systems Space packet protocol Amendment 1	Binding and Binary Encoding  Mission operations MAL space packet transport binding and binary encoding  CCSDS Bundle Protocol Specification  Space data and information transfer systems CCSDS Bundle protocol specification  Space Data Link Security Protocol  Space data and information transfer systems Space data link security  Proximity-1 Space Link Protocol - Coding and Synchronization Sublayer  Space data and information transfer systems Proximity-1 space link protocol- Coding and synchronization sublayer  Proximity-1 Space Link Protocol- Coding and Synchronization Sublayer  Proximity-1 Space Link Protocol- Coding and Synchronization sublayer  Proximity-1 Space Link Protocol- Physical Layer  Proximity-1 Space Link Protocol- Physical Layer  Space data and information transfer systems Proximity-1 space link protocol Physical layer  TC Synchronization and Channel Coding  Space data and information transfer systems TC synchronization and channel coding  TM Space Data Link Protocol  Space data and information transfer systems TC synchronization and channel coding  TM Space Data Link Protocol  Space data and information transfer systems TM (telemetry) space data link protocol  Space data and information transfer systems Space packet protocol Amendment 1  Space data and information transfer systems Space packet protocol Amendment 1

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ISO 22663:2015	Space data and information transfer systems Proximity-1 space link protocol Data link layer	60.60		
ISO 22664:2016	TC Space Data Link Protocol	60.60		
ISO 22664:2016	Space data and information transfer systems TC (telecommand) space data link protocol			
ISO 22666:2016	AOS Space Data Link Protocol		732.0-B-3 (Sep 2015)	2021-11-15
ISO 22666:2016	Space data and information transfer systems AOS (advanced orbiting systems) space data link protocol	60.60		
ISO 22667:2013	Communications Operation Procedure-1		232.1-B-2 (Sep 2010)	2018-06-01
ISO 22667:2013	Space data and information transfer systems Communication operations Procedure-1	60.60		

b. Registered Work items: 2 including 1 revision

Approval stage: 50 (Approval stage)

**NONE** 

Enquiry stage: 40 (Enquiry stage)

**NONE** 

Committee Stage: 30 (Committee stage)

Color	ISO Reference (withdrawal date)	ISO Document title	Current stage	CCSDS Reference (obsolescence date)	ISO SR Date
	ISO/CD 17355	Space data and information transfer systems CCSDS file delivery protocol	30.99		
	ISO/CD 23103	Space link extension Cross support transfer service – Specification framework	30.99		

	ISO/CD 23104	Space link extension Cross support transfer service Monitored data	30.99		
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Preparatory Stage: 20 (Preparatory stage)

NONE

c. Possible new work items: 4 including 0 revisions

Proposal Stage: 10 (Proposal stage)

Color codes	ISO Reference (withdrawal date)	ISO Document title	Current stage	CCSDS Reference (obsolescence date)	ISO SR Date
	ISO/NP 13541	Space data and information transfer systems Attitude data messages	10.99		
	ISO/NP 18441	Space data and information transfer systems Space link extension Application program interface for transfer services Core specification	10.99		
	ISO/NP 21077	Space data and information transfer systems Digital motion imagery	10.99		
	DIS 21077	Digital Motion Imagery		766.1-B-1 (May 2015)	Under Development
	ISO/NP 22669	Space data and information transfer systems Space link extension (SLE) Return-all-frames service	10.99		
	ISO/NP 22670	Space data and information transfer systems Space link extension (SLE) Return-channel-frames service	10.99		
	ISO/NP 22671	Space data and information transfer systems Space link extension (SLE) Forward communications link transmission unit (CLTU) service	10.99		
	ISO/NP 22672	Space data and information transfer systems Space link extension (SLE) Forward space packet service specification	10.99		
	ISO/NP 26143	Space data and information transfer systems Space link extension (SLE) Return operational control fields service	10.99		

Preliminary Stage: 00 (Preliminary stage)

**NONE** 

# d. Work Programme Reallocation: 90 (Review stage)

Color codes	ISO Reference (withdrawal date)	ISO Document title	Current stage	CCSDS Reference (obsolescence date)	ISO SR Date
	ISO 11104:2011	Time Code Formats		301.0-B-4 (Nov 2010)	2022-03-07
	ISO 11104:2011	Space data and information transfer systems Time code formats	90.93		
	ISO 12175:1994	Standard Formatted Data Units - Structure and Construction Rules		620.0-B-2 (May 1992)	2020-03-21
	ISO 12175:1994	Space data and information transfer systems Standard formatted data units Structure and construction rules	90.93		
	ISO 13526:2010	Tracking Data Message		503.0-B-1 (Nov 2007)	2020-03-21
	ISO 13526:2010	Space data and information transfer systems Tracking data message	90.93		
	ISO 13527:2010	XML Formatted Data Unit (XFDU) Structure and Construction Rules		661.0-B-1 (Sep 2008)	2020-12-15
	ISO 13527:2010	Space data and information transfer systems XML formatted data unit (XFDU) structure and construction rules	90.93		
	ISO 13537:2010	Reference Architecture for Space Data Systems		311.0-M-1 (Sep 2008)	2020-12-15
	ISO 13537:2010	Space data and information transfer systems Reference architecture for space data systems	90.93		
	ISO 13541:2010	Attitude Data Messages		504.0-B-1 (May 2008)	2020-12-15
	ISO 13541:2010	Space data and information transfer systems Attitude data messages	90.92		
	ISO 13764:1996	Standard Formatted Data Units - Control Authority Procedures		630.0-B-1 (Jun 1993)	2019-07-14
	ISO 13764:1996	Space data and information transfer systems Standard formatted data units Control authority procedures	90.93		
	ISO 14721:2012	Reference Model for an Open Archival Information System (OAIS)		650.0-M-2 (Jun 2012)	2017-09-01

ISO 14721:2012	Space data and information transfer systems Open archival information system (OAIS) Reference model	90.20		
ISO 14961:2002	Parameter Value Language Specification		641.0-B-2 (Jun 2000)	2018-08-22
ISO 14961:2002	Space data and information transfer systems Parameter value language specification	90.93		
ISO 14962:1997	ASCII Encoded English		643.0-B-1 (Nov 1992)	2019-07-14
ISO 14962:1997	Space data and information transfer systems ASCII encoded English	90.93		
ISO 15395:1998	Standard Formatted Data Units - Control Authority Data Structures		632.0-B-1 (Nov 1994)	2018-08-22
ISO 15395:1998	Space data and information transfer systems Standard formatted data units Control authority data structures	90.93		
ISO 15396:2007	Cross Support Reference Model - Part 1: Space Link Extension Service		910.4-B-2 (Oct 2005)	2020-12-15
ISO 15396:2007	Space data and information transfer systems Cross support reference model - Part 1: Space Link Extension Service	90.93		
ISO 15888:2000	Standard Formatted Data Units - Referencing Environment		622.0-B-1 (May 1997)	2022-01-09
ISO 15888:2000	Space data and information transfer systems Standard formatted data units Referencing environment	90.93		
ISO 15889:2011	The Data Description Language EAST Specification		644.0-B-3 (Jun 2010)	2016-10-14
ISO 15889:2011	Space data and information transfer systems The data description language EAST specification	90.60		
ISO 15893:2010	Space Communications Protocol Specification (SCPS) - Transport Protocol		714.0-B-2 (Oct 2006)	2021-03-15
ISO 15893:2010	Space data and information transfer systems Space communications protocol specification (SCPS) Transport protocol (SCPS-TP)	90.93		
ISO 16363:2012	Audit and Certification of Trustworthy Digital Repositories		652.0-M-1 (Sep 2011)	2022-07-12

2014-11-08
2014-12-15
Under Revision
2016-06-01
2021-11-15
2020-08-15
2020-08-15
2020-08-15

ISO 20213:2015	Space data and information transfer systems Spacecraft onboard interface services Message transfer service	90.99		
ISO 20216:2015	Spacecraft Onboard Interface Services - Device Data Pooling Service		871.1-M-1 (Nov 2012)	2020-08-15
ISO 20216:2015	Space data and information transfer systemsSpacecraft Onboard Interface Services - Device Data Pooling Service	90.99		
ISO 20217:2015	Spacecraft Onboard Interface Services - File and Packet Store Services		873.0-M-1 (Sep 2012)	2020-08-15
ISO 20217:2015	Space data and information transfer systemsSpacecraft Onboard Interface Services - File and Packet Store Services	90.99		
ISO 20618:2015	Spacecraft Onboard Interface Services - Device Enumeration Service		871.3-M-1 (Oct 2014)	2020-12-15
ISO 20618:2015	Space data and information transfer systems Spacecraft onboard interface services Device enumeration service	90.99		
ISO 20652:2006	Producer-Archive Interface Methodology Abstract Standard		651.0-M-1 (May 2004)	2019-07-14
ISO 20652:2006	Space data and information transfer systems Producer- archive interface Methodology abstract standard	90.93		
ISO 21077:2016	Digital Motion Imagery		766.1-B-1 (May 2015)	2021-12-23
ISO 21077:2016	Space data and information transfer systems Digital motion imagery (based on CCSDS 766.1B-1)	90.92		
ISO 21961:2003	Data Entity Dictionary Specification Language (DEDSL) - Abstract Syntax		647.1-B-1 (Jun 2001)	2018-08-22
ISO 21961:2003	Space data and information transfer systems Data entity dictionary specification language (DEDSL) Abstract syntax	90.93		
ISO 21962:2003	Data Entity Dictionary Specification Language (DEDSL) - PVL Syntax		647.2-B-1 (Jun 2001)	2018-08-22
ISO 21962:2003	Space data and information transfer systems Data entity dictionary specification language (DEDSL) PVL syntax	90.93		
ISO 22641:2012	TM Synchronization and Channel Coding		131.0-B-2 (Aug 2011)	2017-07-15

ISO 22641:2012	Space data and information transfer systems TM (telemetry) synchronization and channel coding	90.20		
ISO 22643:2003	Data Entity Dictionary Specification Language (DEDSL) - XML/DTD Syntax		647.3-B-1 (Jan 2002)	2019-07-14
ISO 22643:2003	Space data and information transfer systems Data entity dictionary specification language (DEDSL) XML/DTD Syntax	90.93		
ISO 22646:2005	Space Packet Protocol		133.0-B-1 (Sep 2003)	2020-03-17
ISO 22646:2005	Space data and information transfer systems Space packet protocol	90.93		
ISO 22669:2013	Space Link Extension - Return All Frames Service Specification		911.1-B-3 (Jan 2010)	2018-06-01
ISO 22669:2013	Space data and information transfer systems Space link extension Return- all frames service Specification	90.92		
ISO 22670:2013	Space Link Extension - Return Channel Frames Service Specification		911.2-B-2 (Jan 2010)	2018-06-01
ISO 22670:2013	Space data and information transfer systems Space link extensionReturn-channel frames service specification	90.92		
ISO 22671:2011	Space Link Extension - Forward CLTU Service Specification		912.1-B-3 (Jul 2010)	2022-07-12
ISO 22671:2011	Space data and information transfer systems Space link extension (SLE) Forward CLTU Service Specification	90.92		
ISO 22672:2011	Space Link Extension - Forward Space Packet Service Specification		912.3-B-2 (Jul 2010)	2022-03-11
ISO 22672:2011	Space data and information transfer systems Space link extension (SLE) Forward space packet service specification	90.92		
ISO 26143:2013	Space Link Extension - Return Operation Control Fields Service Specification		911.5-B-2 (Jan 2010)	2018-06-01
ISO 26143:2013	Space data and information transfer systems Space link extension (SLE)Return operational control fields service specification	90-92		
ISO 26868:2009	Image Data Compression		122.0-B-1 (Nov 2005)	2019-07-14

ISO 26868:2009	Space data and information transfer systems Image data compression	90.93		
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e. Standards withdrawn: 95 (Withdrawal stage)

NONE

#### International harmonized stage codes

STAGE	SUBSTAGE						
				90 Decision Substages			
	00 Registration	20 Start of main action	60 Completion of main action	92 Repeat an earlier phase	93 Repeat current phase	98 Abandon	99 Proceed
00 Preliminary stage	00.00 Proposal for new project received	00.20 Proposal for new project under review	00.60 Close of review			00.98 Proposal for new project abandoned	00.99 Approval to ballot proposal for new project
10 Proposal stage	10.00 Proposal for new project registered	10.20 New project ballot initiated	10.60 Close of voting	10.92 Proposal returned to submitter for further definition		10.98 New project rejected	10.99 New project approved
20 Preparatory stage	20.00 New project registered in TC/SC work programme	20.20 Working draft (WD) study initiated	20.60 Close of comment period			20.98 Project deleted	20.99 WD approved for registration as CD
30 Committee stage	30.00 Committee draft (CD) registered	30.20 CD study/ballot initiated	30.60 Close of voting/ comment period	30.92 CD referred back to Working Group		30.98 Project deleted	30.99 CD approved for registration as DIS
40 Enquiry stage	40.00 DIS registered	40.20 DIS ballot initiated: 5 months	40.60 Close of voting	40.92 Full report circulated: DIS referred back to TC or SC	40.93 Full report circulated: decision for new DIS ballot	40.98 Project deleted	40.99 Full report circulated: DIS approved for registration as FDIS
50 Approval stage	50.00 FDIS registered for formal approval	50.20 FDIS ballot initiated: 2 months. Proof sent to secretariat	50.60 Close of voting. Proof returned by secretariat	50.92 FDIS referred back to TC or SC		50.98 Project deleted	50.99 FDIS approved for publication
60 Publication stage	60.00 International Standard under publication		60.60 International Standard published				
90 Review stage		90.20 International Standard under periodical review	90.60 Close of review	90.92 International Standard to be revised	90.93 International Standard confirmed		90.99 Withdrawal of International Standard proposed by TC or SC
95 Withdrawal stage		95.20 Withdrawal ballot initiated	95.60 Close of voting	95.92 Decision not to withdraw International Standard			95.99 Withdrawal of International Standard

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This annual report was prepared by the ISO TC20/SC13 Subcommittee Chairman and Secretary, declared as follows:

**EDUARDO W. BERGAMINI** 

Chairman, ISO TC20/SC13

Subcommittee

São José dos Campos, Brazil

October 30, 2017

**JAMES AFARIN** 

Secretary, ISO TC20/SC13

Subcommittee

Washington D.C., U.S.A.

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